storing a quantity of the damping material on the head,

dispensing individual units of the damping material from the stored quantity on the head, and

individually placing the dispensed units onto the structure.

8. A method of damping acoustic vibrations in a structure, comprising:

producing a vibration damping tape, said damping tape comprising a removable backing upon a full width of each respective major surface, each of said respective major surfaces comprising a continuous adhesive surface extending across said full width, one of said continuous adhesive surfaces placed by a placement head on said structure following removal of said backings, said removal only prior said placement;

using automatic tape placement equipment to place the tape on the structure.

9. The method of claim **8**, wherein producing the tape includes:

forming at least one layer of viscoelastic material, and

applying the backing is performed by applying the backing to the viscoelastic layer.

10. The method of claim **9**, wherein applying the backing includes placing an adhesive between the backing and the layer of viscoelastic material.

11. The method of claim **8**, wherein removing the backing includes:

separating the backing from the tape, and

rolling the separated backing onto a take-up spool.

12. The method of claim **8**, wherein using the automatic equipment to place the tape includes:

moving the placement head over the structure,

dispensing the tape from a supply of tape on the head,

using the head to cut lengths of the dispensed tape, and

using the head to compact each length of dispensed tape against the structure.

13. A method of installing acoustic damping material on an aircraft structure, comprising:

placing a supply of damping tape on a material placement head;

dispensing the tape from the tape supply, said damping tape comprising a removable backing upon a full width of each respective major surface, each of said respective major surfaces comprising a continuous adhesive surface extending across said full width;

removing said removable backings from a respective major surface of the tape as the tape is being dispensed, said removable backings removed only prior to placing of said tape on said structure;

taking up the removed backings on a respective spool on the head;

cutting lengths of the dispensed tape;

feeding the cut lengths of tape to a roller on the head;

using the roller to compact the tape against the structure;

using a robotic device to move the head across the structure as the tape is being dispensed and compacted against the structure; and,

using a programmed computer to control the operation of the head and the robotic device, including automatically controlling the movement of the head to place a plurality of tape strips on the structure in a pre-programmed arrangement.

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